

Hawaiian Memorial Park Expansion Conceptual Plan

Hawaiian Memorial Park Cemetery Expansion Project
 Kāne'ohe, O'ahu, Hawaii

Figure 2.2

Cemetery Expansion

The majority of the approximately 53.45-acre Petition Area would be used for expansion of the cemetery by 28.2 acres (53% of total Petition Area). The cemetery expansion would involve the construction of landscaped areas for burial space. Small private structures could also be placed throughout the cemetery grounds with special features, garden walls, walkways, and monuments similar to that present within other areas of HMP. After grading to establish appropriate slopes, the majority of the land would be landscaped with turf and would match the appearance of the existing cemetery.

An internal roadway system encompassing about 3 acres would be constructed to provide access to various areas as shown in Figure 2.2. The roadway would be paved and suitable to accommodate two-way traffic.

An irrigation system would be provided to irrigate the landscape elements of the cemetery. The irrigation system for the existing HMP is served by the City's potable water system. A connection point is located at the entrance to HMP in the vicinity of Mahinui Road and Kamehameha Highway. A waterline under Kumakua Place irrigates the existing Ocean View Garden site. The feasibility of incorporating a non-potable water source for the cemetery expansion area would be evaluated. However, if a non-potable water source cannot be obtained, the cemetery would be allowed to hook up to the domestic water supply.

Storm water runoff would be managed in accordance with applicable City regulations and drainage standards. The primary method planned to manage the cemetery's stormwater would be a system of retention areas designed to meet City's Drainage Standards for the 100-year, 1-hour storm event. More detailed information associated with grading and drainage improvements would be discussed in the Draft EIS.

Cultural Preserve

A 14.5-acre area within the Petition Area would be established as a cultural preserve. This cultural preserve would allow for the preservation and maintenance of cultural sites present within this area. This area contains a range of significant resources within its boundaries, including, but not limited to Kawa'ewa'e Heiau, other historic sites, native plants used for cultural practices, and is the site of wahi pana (storied places or landscapes).

A preservation plan is currently being developed by Hawaiian Memorial Life Plan, Ltd. in partnership with the Ko'olaupoko Hawaiian Civic Club regarding the stewardship and management of the cultural preserve. The preservation plan would determine the best treatment strategies for the resources within the cultural preserve, the reserve's management, and its operation. The preservation plan would ensure the long-term maintenance and security of Kawa'ewa'e Heiau and this area.

The 156.5 acres of the 164.4 acre parcel (less 7.9-acre Ocean View Garden) will be placed in a conservation easement. This conservation easement would limit any other future development on the property, except for the expansion of the cemetery and cultural preserve. Further details on the conservation easement would be discussed in the Draft EIS.

2.3 PROJECT PHASING AND ESTIMATED COSTS

HMP intends to commence design and construction of the backbone infrastructure for development of the entire Petition Area in a single integrated system as soon as all entitlements have been obtained. Construction would likely occur in phases in successive 5-acre increments until all sections of the cemetery expansion area have been completed.

It is anticipated that the entitlement phase of the project would be completed in early to mid-2019. A preliminary target date for completion of the initial phase of construction is 2020.

Development costs for the cemetery construction are estimated at \$16 million (in 2017 dollars).

2.4 LISTING OF PERMITS AND APPROVALS

A listing of required discretionary land use approvals and ministerial permits for this project is provided.

State of Hawai'i Permits

Land Use Commission

- State Land Use District Boundary Amendment

Department of Health

- National Pollutant Discharge Elimination System (NPDES) Permit - Construction Activities
- Construction Noise Permit, if required

Department of Land and Natural Resources, Historic Preservation Division

- Chapter 6E, HRS, Historic Preservation Review

City and County of Honolulu Permits

Board of Water Supply

- Water System Facilities Charges

Department of Planning and Permitting

- Grading Permit

2.5 ALTERNATIVES CONSIDERED

This section discusses alternatives to the Proposed Action that have been identified and would be evaluated during preparation of the Draft EIS. Alternatives discussed include: 1) not implementing the project, otherwise referred to as the “No-Action” Alternative; and 2) expansion of the cemetery utilizing a larger area or the entire remaining 156.5 acres of Parcel 1.

The No Action Alternative assumes there would be no additional expansion of the HMP Cemetery, and is planned to be eliminated from further consideration in the Draft EIS because it would not meet the project need and objectives. As previously discussed, there is a need for additional burial plots due to HMP’s depleting inventory and demographic trends showing a growing need for such plots due to Hawai‘i’s aging population. The Draft EIS would address this alternative in greater detail, and it would serve to establish baseline conditions (without project) to assess impacts resulting from the project.

The other alternative considering expanding the cemetery to utilize the entire acreage of Parcel 1 is also planned to be eliminated from further consideration in the Draft EIS. This alternative would support the project need and objectives, however, there would be increased environmental impacts resulting from this action. The Draft EIS would address this alternative in greater detail along with likely impacts associated with it.

The Draft EIS would evaluate and include discussion of other prudent and feasible alternatives meeting the project need and objectives that may be identified as part of the consultation process associated with publication of this EISPN.

CHAPTER 3 NATURAL AND HUMAN ENVIRONMENT

Climate

O‘ahu’s temperatures have small seasonal variation such that the temperature range averages only 7 degrees between the warmest months (August and September) and the coolest months (January and February) and about 12 degrees between day and night. The HMP project area is located in Kāne‘ohe, in the windward lowlands, a climatic region that is characterized as being moderately rainy with frequent trade wind showers. Temperatures are nearly uniform and mild compared to other regions on the island. Average low temperatures range from about 62 degrees Fahrenheit (° F) in the winter to about 69° F in the summer. Average high temperature ranges from approximately 75° F in the winter to 81° F in the summer. The project area receives between 60 inches of rain annually.

Winds are predominantly “trade winds” from the east-northeast except for occasional periods when “Kona” storms generate strong winds from the south, or when the trade winds are weak and land breeze to sea breeze circulations develop. Wind speeds typically vary between 5 and 15 miles per hour providing relatively good ventilation much of the time. Lower velocities (less than 10 mph) occur frequently when the usual northeasterly trade winds tend to fall giving way to light, variable wind conditions through the winter and on into early spring.

3.1 TOPOGRAPHY

The Petition Area encompasses the lower area of the hillside that includes gently sloping areas with smaller gullies. The site generally slopes in a northwest direction from the hillside toward the Pikoiloa subdivisions. Elevations associated with cemetery expansion area range from 200 feet above mean sea level (AMSL) to 375 feet AMSL as shown on Figure 3.1. This area has gentle to moderate slopes varying from 10% to 15% in some areas, and 15% to 45% in other steeper areas closer to the hillside. The area planned for the cultural preserve extends further up the hillside to an elevation of about 500 feet AMSL.

Probable Effects

Proposed improvements would involve grading activities to create more consistent and gentler finished slopes within the cemetery area that would alter the site’s existing topography. The general topographic condition of the area and natural drainage patterns would be retained, however, the degree of slope within certain areas would be reduced. Areas would need to be graded to provide a suitable physical environment for burial plots, and would generally have slopes of 15% to 20% or less. Therefore, changes to the topography should overall be minor given existing conditions.

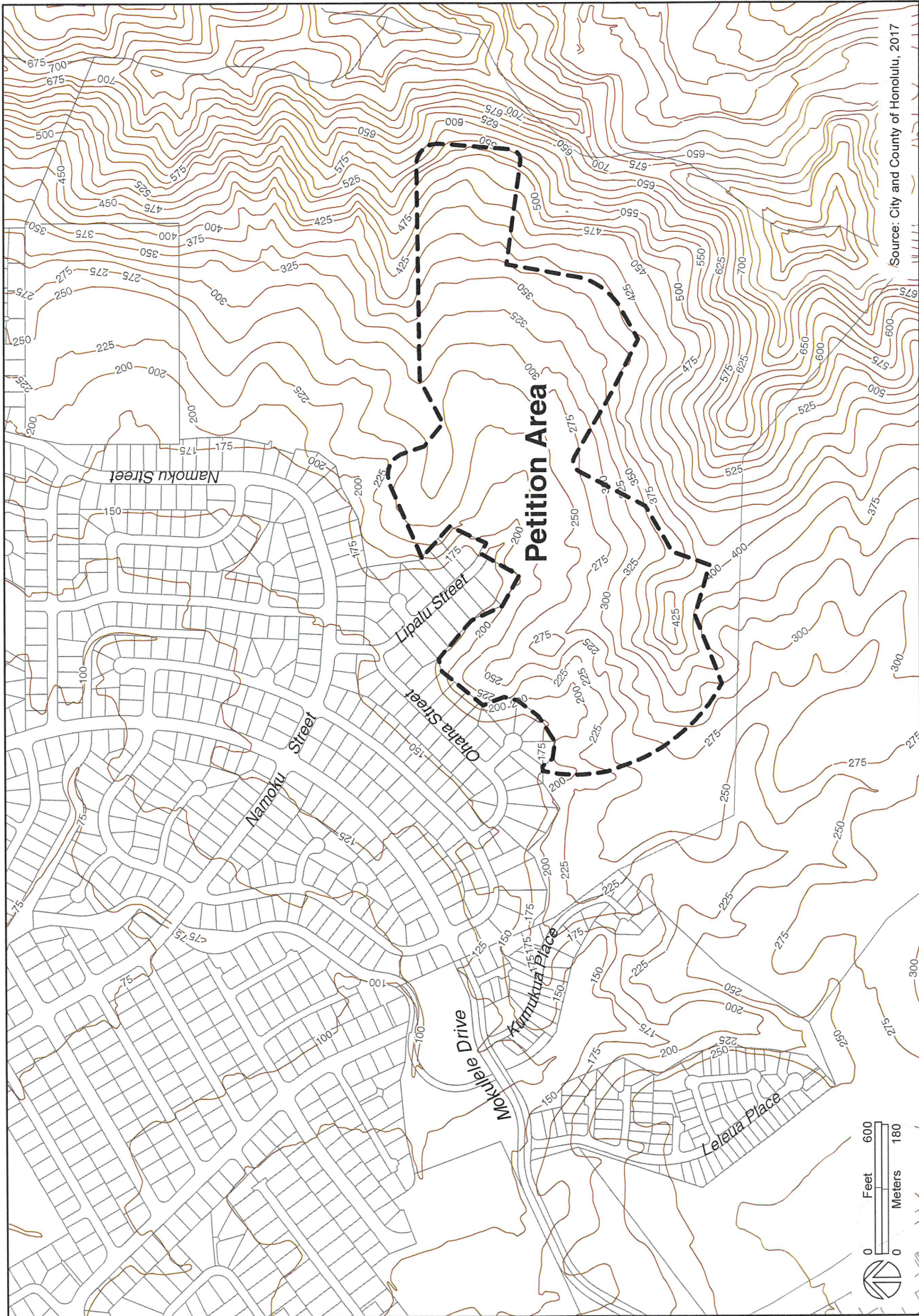


Figure 3.1

Topographic Map
 Hawaiian Memorial Park Cemetery Expansion Project
 Kāne'ohe, O'ahu, Hawaii

Internal roadways would require some cut and fill, but are intended to follow existing contours of the site. Areas exceeding 25 percent slope would not be suitable to create burial plots. A preliminary engineering report would address potential impacts from short-term construction activities, and the Draft EIS would identify potential best management practices that can be implemented to mitigate impacts from ground disturbance.

3.2 SOILS

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service classifies soils within the Petition Area as comprised of: 1) Alaeloa Series; and 2) Kaneohe Series association of soils. These soil types are shown on Figure 3.2, and a description of these soils based upon the *Soil Survey, Islands of Kaua'i, O'ahu, Maui, Moloka'i and Lāna'i, State of Hawai'i* (SCS, 1972) study is provided below.

Alaeloa Series

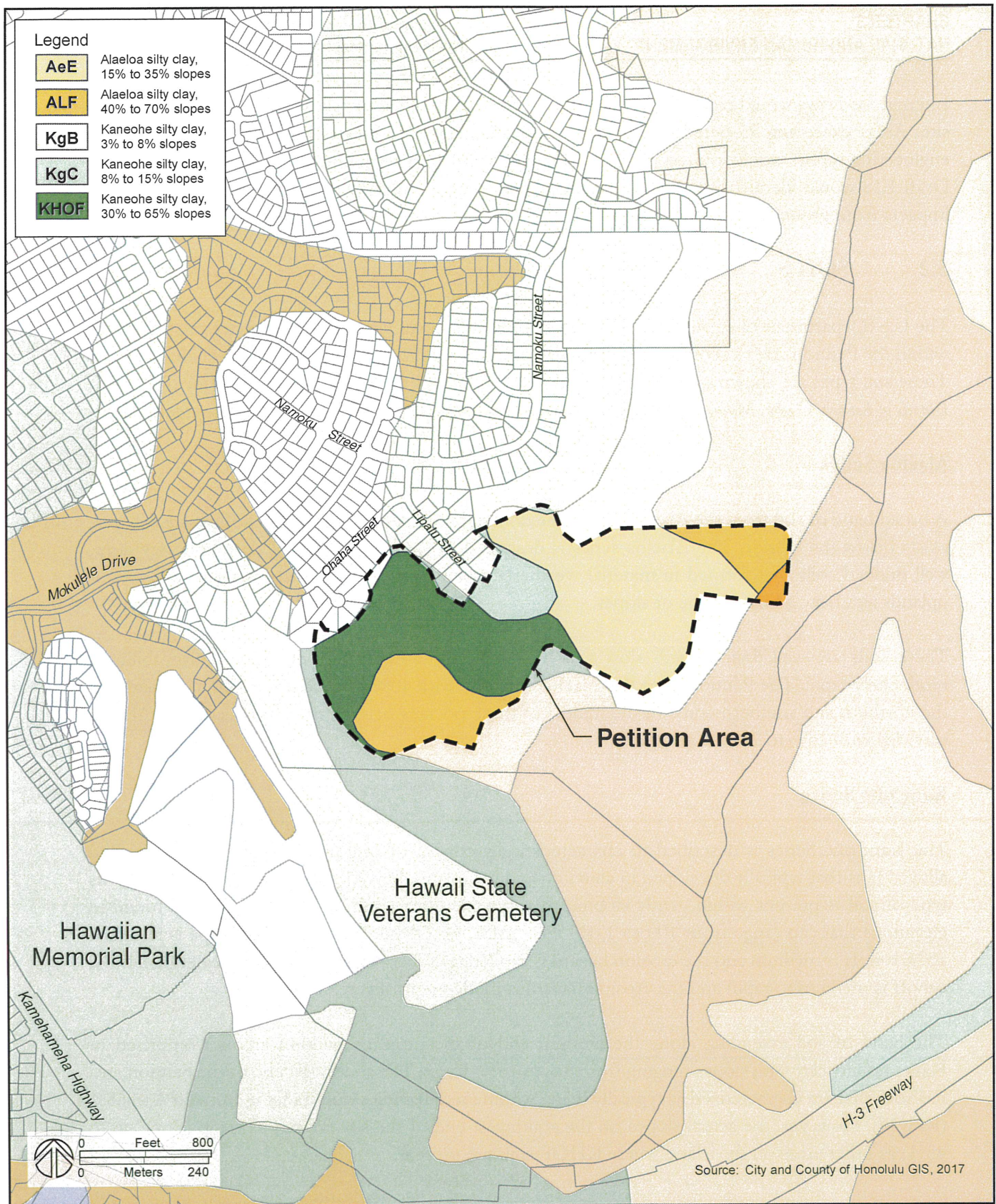
A broad band of soil from the Alaeloa series, the dominant soil series in the proposed expansion area, exists below the hillside. The Alaeloa series is described to typically consist of deep and very deep, well drained soils that formed in material weathered from basic igneous rock. Alaeloa soils are on uplands and have a broad range of slopes.

These soils are well drained with slow to very rapid runoff depending on slope. Permeability is moderately rapid. The Petition Area has Alaeloa silty clay with 40% to 70% slopes (ALF) situated on the northern and southern ends. In the middle of these pockets of ALF is a large section of Alaeloa silty clay with 15% to 25% slope (AeE).

Kāne'ohe Series

The Kāne'ohe Series is described to characteristically consist of well-drained soils on terraces and alluvial fans that typically developed in alluvium and colluvium derived from basic igneous rock. This type of soil is present within gently sloping to very steep areas, and are characteristically found in elevations that can range from 100 to 1,000 feet AMSL on O'ahu. Where existing slope is less than 15%, runoff is medium and the erosion hazard is moderate. Where existing slope is greater than 30%, runoff is medium to rapid and the erosion hazard is moderate to severe.

The band of soil extending along the western end of the project's petition area is comprised of Kaneohe silty clay with slopes ranging from 8% to 15% (KgC). The southwest end of the petition area has soils that are characterized as typically being within areas having slopes ranging from 30% to 65% (KHOF). However, the actual slopes on the southwest end of the site are not as steep (slope up to 45%) as other areas on the island where KHOF soils are present.



Soils Map

Figure 3.2

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Probable Effects

Project improvements would impact soils due to grading activities necessary for internal roadways and creating areas for active cemetery use; however, impacts are not expected to be adverse. A grading plan prepared for the project during the design phase would try to achieved balanced cut and fill quantities throughout the site so that no soil needs to be imported or exported for disposal. Preliminary grading plans and quantity estimates would be developed as part of a preliminary engineering report prepared, and addressed in the Draft EIS.

The Draft EIS would address impacts from short-term construction activities, and identify potential best management practices that can be implemented. Standard construction best management practices would be utilized to mitigate short-term soil erosion during construction, and may include stationing water trucks nearby during construction to provide sprinkling in active areas, and use of temporary silt fencing, sand bags or screens. Actual implementation measures would be developed during project design.

3.3 NATURAL HAZARDS

3.3.1 Seismic Hazards

The U.S. Geological Survey's *Atlas of Natural Hazards in the Hawaiian Coastal Zone* (USGS, 2002) assigns seismic hazard intensity ratings for all islands on a scale from "1" to "5" with "1" representing lowest hazard and "5" the highest. The southern half of O'ahu extending from Mākaha east around Diamond Head and Makapu'u and north up to Kāne'ohe Bay is assigned a volcanic/seismic risk ranking of "3" due the region's proximity to the Moloka'i Seismic Zone. The remainder of the island is ranked "2" with respect to volcanic/seismic hazard (USGS, 2002). The Petition Area is situated within the southern half of O'ahu and has a risk ranking of "3" similar to other uses in the eastern half of the Windward district. The project area's earthquake hazard risk is not significantly higher than other areas of O'ahu.

Potential Project Impact

The proposed expansion of the cemetery would not be impacted by or have an impact on seismic hazard. The majority of improvements would consist of internal roadways and landscaping for burial plots and accessory improvements. The susceptibility of structures and paths to earthquake damage would be no different than the existing structures in the surrounding area.